

ADVANCED MATERIALS AND CHEMICALS PROGRAM HIGHLIGHTS

SBI BIOENERGY INC. AMC-11-015

The world continues to move toward a lower-carbon future, especially in the area of transportation fuels. Biofuels are a popular solution because they are low-cost and emit fewer greenhouse gas emissions than conventional petroleum fuels. SBI BioEnergy Inc. (SBI) can produce lower-carbon renewable drop-in fuels for diesel, jet fuel and gasoline from waste oils, greases and vegetable oils.

Blended directly with conventional fossil fuels, SBI products do not need expensive additives or equipment alterations and can help fuel suppliers meet the requirements of lower carbon or renewable fuel standards.

With help from \$1 million in funding support from Alberta Innovates' Advanced Chemicals and Materials program under Project AMC-11-015, SBI built a 25,000 square foot demonstration plant in Edmonton, Alberta with adjacent R&D lab and feedstock tank farm. "This funding came at a critical time," said Dr. Inder Singh, President & CEO, SBI. "We had a proof of concept, but our financial reserves were too low to demonstrate to investors that it worked at a commercial scale. Alberta Innovates staff could see the value of our technology and without their help, the project would have died." With construction started in 2015, SBI received a commitment for \$10 million in 2016 from Emissions Reduction Alberta to complete deployment of the demonstration plant. The project also received support from Alberta Energy, Alberta Environment and Parks, National Research Council's Industrial Research Assistance Program and Sustainable Development Technology Canada.

Designed for a cold climate, the \$19-million plant can produce 10 million litres per year of biofuel using a

proprietary technology that is low carbon-negative; does not use water, chemicals or hydrogen; produces no waste; and has potential to annually reduce GHG emissions by 95,000 tonnes, which is like taking almost 20,000 cars off the road each year. Currently, the plant's main feedstock is non-food grade canola oil.



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Dr. Inder Singh
President & CEO, SBI





The SBI BioEnergy plant uses the world's first closed-loop technology to produce drop-in biofuels from renewable biomass like canola.

Source: 123RF

The process can potentially use a variety of other Alberta farm products such as pennycress, camelina, animal fats and tall oil, an Alberta forestry by-product. A by-product of the plant is glycerol, used in food, cosmetics, and pharmaceuticals and as a feedstock for making bioplastics, bio-adhesives and biodegradable solvents.

In 2017, Royal Dutch Shell Petroleum Company and SBI BioEnergy Inc. reached an agreement granting Shell exclusive development and licensing rights for SBI's biofuel technology. Under the agreement, Shell and SBI will work together to demonstrate the potential of the technology and, if successful, scale up for commercial application.



SBI BioEnergy plant
Source: Marie Cusack

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